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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,326	06/03/2002	Tiecheng A. Qiao	83451D-W	3993

7590 04/29/2005

Patent Legal Staff  
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EXAMINER

PANARO, NICHOLAS J

ART UNIT PAPER NUMBER

1637

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/062,326	<b>Applicant(s)</b> QIAO ET AL.	
	<b>Examiner</b> Nicholas J. Panaro	<b>Art Unit</b> 1637	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/4/2002</u> . | 6) <input type="checkbox"/> Other: _____  |

*JCC*

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election with traverse of Group II, product claims 12-17, in the reply filed on April 7, 2005 is acknowledged. The traversal is on the ground(s) that both the process and product claims are in the same class and subclass. This is not found persuasive because classification is only one consideration with respect to search burden. The class and subclass in which said process and product claims are classified are broad and encompass many inventions. As stated in the restriction requirement of March 21, 2005, in the instant case the device could be fabricated by applying a layer of gelatin to the support, allowing it to gel and subsequently embedding beads in said gelatin. The search for the product would not necessarily yield art pertaining to the process of making. Since the microarray can be made by other than the claimed method a search on the process of making may not yield art pertaining to the product. Furthermore, a search on the process claims would require a search on enzymatic activities of several enzymes (e.g., esparase, alcalase, savinase, papain) and several coating techniques (e.g., knife coating, blade coating and slot coating), none of which are mentioned in the product claims. Thus, keyword searches on the abovementioned enzymes and coating techniques would not be overlapping with keyword searches pertaining to the product claims.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-11 and 18-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 7, 2005.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of

inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al (U.S. Patent 6,770,441; filed August 16, 2001; issued August 3, 2004) in view of Anderson et al (U.S. Patent 6,846,635; filed July 28, 2000; issued January 25, 2005).**

Regarding Claim 12, Dickinson et al teach a microarray comprising: a support having at least one surface containing immobilized microspheres (column 2, lines 19-28); wherein a first portion of the microspheres is submerged in adhesive (column 13, lines 24-32) and a second portion is exposed above the adhesive and is substantially free of adhesive (column 13, lines 24-32; Figures 16a, 16b, and 16c). Dickinson et al do not teach immobilization of microspheres by gelatin.

Anderson et al teach immobilization of microspheres to a solid support, i.e., a tubule, in gelatin (column 9, lines 6-8; column 9, line 65 – column 10, line 4) at temperatures below ambient temperature for the advantage of not exposing labile biomolecules, e.g., nucleic acids, to denaturing temperatures (column 10, lines 10-11, 17-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of Anderson et al and Dickinson et al to use gelatin to immobilize microspheres on a support. One of ordinary skill would have been motivated to do so for the

advantages of "exposing labile biomolecules, e.g., nucleic acids, to denaturing temperatures" (column 10, lines 10-11, 17-19) taught by Anderson et al.

Regarding claim 13, Anderson et al teach immobilization of the microspheres on the gelation coating is preserved upon gelation of the gelling agent (column 9, lines 6-8; column 9, line 65 – column 10, line 4).

Regarding claim 14, Dickerson et al teach microspheres which bear chemically active sites (column 34, lines 11-12).

Regarding claim 15, Dickerson et al teach microspheres wherein the chemically active sites comprise nucleic acid (column 34, lines 43-53).

Regarding claim 16, Dickerson et al teach the support comprises glass (column 9, lines 63-64).

**Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al (U.S. Patent 6,770,441; filed August 16, 2001; issued August 3, 2004) in view of Anderson et al (U.S. Patent 6,846,635; filed July 28, 2000; issued January 25, 2005) in further view of Baidya et al (U.S. Patent 6,716,579; filed June 9, 2000; issued April 6, 2004).**

Regarding claim 17, Baidya et al teach a polynucleotide array (column 2, lines 42-52) wherein the support is flexible (column 11, lines 43-49) for the advantage of being able to bend, fold, twist or similarly manipulate the support without breaking said support (column 11, lines 49-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of Baidya et al with the teachings of Anderson et al and Dickerson et al to use a flexible support. One of ordinary skill would have been motivated to do so for the advantages of "being able to bend, fold, twist or similarly manipulate the support without breaking said support" (column 11, lines 49-52) taught by Baidya et al.

**Conclusion**

Claims 12-17 are rejected. No claims are allowed.

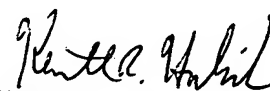
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas J. Panaro whose telephone number is (571) 272-0778. The examiner can normally be reached on Monday - Friday 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NJP -



  
KENNETH R. HORLICK, PH.D  
PRIMARY EXAMINER

4/28/05